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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,369	10/09/2003	Taiichi Miya	MINB-02011/A-3049	6391

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EXAMINER	
ROMAN, LUIS ENRIQUE	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/681,369	MIYA ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 October 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/09/03, 04/13/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 & 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dulin et al. (US 6118201) in view of Murakami et al. (JP 05021234 A) and Berger (US 5025201).

Regarding claim 1 Dulin et al. discloses a rotary transformer (Abstract & Fig. 1 element 20) type resolver having an inner core on which a rotary transformer output winding (col. 1 lines 53-56 & Fig. 1 elements 52, 54) is wound and a resolver rotor on which resolver excitation windings are wound, a crossover (col. 3 lines 27-32 & Fig. 1 element 70) that connects the rotary transformer output winding and the resolver excitation windings.
Dulin et al. does not disclose a disconnect protection structure comprising an insulating tube that covers the crossover and that has outermost ends secured to the crossover; and thermal expansion coefficient absorption means for absorbing a difference between thermal expansion coefficients of the crossover and the insulating tube to thereby inhibit disconnection of the crossover from the rotary transformer output winding and the resolver excitation windings.
Murakami et al. teaches comprising a disconnect protection structure comprising an insulating tube that covers the crossover and that has outermost ends secured to the crossover (Fig. 1 elements 4).
Berger teaches a thermal expansion coefficient absorption means for absorbing a difference between thermal expansion coefficients of a crossover and a insulating tube to thereby inhibit disconnection of the crossover from the rotary transformer output winding and the resolver excitation windings (col.1 lines 40-45).
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Dulin et al. device with the teachings of Murakami et al. and Berger to provide a sleeve with required thermal expansion to cover the crossover as recited and as a result preventing irregular and inaccurate indications due to stresses by mechanically reinforcing the moving parts of the rotary transformer.

Regarding claim 2 Dulin et al. in view of Murakami et al. and Berger disclose the disconnect protection structure of claim 1.
Dulin et al. and Berger do not disclose wherein the insulating tube is separated into a plurality of insulating tube units, and wherein only a leftmost end of an outer left insulating tube unit and a rightmost end of an outer right insulating tube unit are respectively secured to the crossover.
Murakami et al. teaches wherein the insulating tube is separated into a plurality of insulating tube units (Fig. 1 elements 4), and wherein only a leftmost end of an outer left insulating tube unit and a rightmost end of an outer right insulating tube unit are respectively secured to the crossover (Fig. 3 element 15).
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Dulin et al. in view of Berger device with the teachings of Murakami et al. since the crossover may be bent in several parts as it is required that the tube cover the crossover from one end to the other for better mechanical reinforcement.

Regarding claims 3 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 2.
Berger further teaches wherein the thermal expansion coefficient absorption means (col. 1 lines 40-45) comprises the plurality of insulating tube units and a predetermined gap defined between adjacent ones of the plurality of insulating tube units, the plurality of insulating tube units thereby being capable of expanding or contracting in response to temperature changes.

Regarding claim 4 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 2.
Berger does not teach wherein the thermal expansion coefficient absorption means comprises adjacent overlapping ends of the plurality of insulating tube units. However it is known in the art to join separate pieces to meet or satisfy length requirements. Said joining is known to provide overlapping ends.

Regarding claim 5 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 1.
Berger does not teach wherein the thermal expansion coefficient absorption means comprises at least one cutout portion formed on the insulating tube. However it is known in the art to facilitate bending of a sleeve match the shape or geometry of a component.

Regarding claim 6 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 5, wherein the insulating tube mentioned above could be bent to define an elbow, and the cutout portion could be located at the elbow.

Regarding claim 7 Dulin et al. in view of Murakami et al. and Berger discloses a disconnect protection structure for housing a rotary transformer

(Dulin et al. - Abstract & Fig. 1 element 20) type resolver crossover (Dulin et al. - col. 3 lines 27-32 & Fig. 1 element 70), comprising: an insulating tube that covers the crossover (Murakami et al. - Fig. 1 elements 4) and that has outermost ends secured to the crossover (Murakami et al. - Fig. 3 element 15), wherein the insulating tube is divided into a plurality of insulating tube units to enable the insulating tube units (Murakami et al. - Fig. 1 elements 4) to absorb a difference between thermal expansion coefficients of the crossover and the insulating tube and to thereby inhibit disconnection of the crossover (Berger - col.1 lines 40-45).

Regarding claim 8 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 7.
Berger further teaches wherein adjacent ones of the plurality of insulating tube units are separated by a predetermined space to enable the plurality of insulating tube units to expand or contract in to temperature changes response to absorb the difference between the thermal expansion coefficients (col. 1 lines 40-45) of the crossover and the insulating tube and to thereby inhibit the disconnection of the crossover.

Regarding claim 9 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 7.
In the above mentioned tube, the adjacent ends of the plurality of insulating tube units overlap one another over a predetermined distance, the predetermined distance changing in response to shifting of the plurality of insulating tube units relative to one another due to temperature changes (col. 1 lines 40-45 & same as claim 3) as all the materials will experience some change in dimensions due to a change in temperature.

Regarding claim 10 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 7.
In the above mentioned tube, a first one of the plurality of insulating tube units has a first diameter that defines a predetermined distance, and a second tapered diameter that is smaller than the first diameter, a second one of the plurality insulating tube units being set into the first one the plurality of tube units by a distance no greater than the predetermined distance to enable the plurality of insulating tube units to shift relative to one another response to temperature changes (col. 1 lines 40-45 & same as claim 3) as all materials will experience some change in dimension due to a change in temperature.

Regarding claim 11 Dulin et al. in view of Murakami et al. and Berger discloses a disconnect protection structure for housing a rotary transformer (Dulin et al. - Abstract & Fig. 1 element 20) type resolver crossover (Dulin et al. - col. 3 lines 27-32 & Fig. 1 element 70), comprising: a unitary insulating tube that covers the crossover (Murakami et al. - Fig. 1 elements 4) and that has outermost ends secured to the crossover (Murakami et al. - Fig. 3 element 15); and a disconnect stress absorbing cutout (It is known in the art that in order to

change the physical characteristics or behavior of an insulating tube regarding the thermal expansion coefficient, they can be varied in amount and their gap, shape, connected in different ways, having different type of cutouts to get the air contributing to the change of the thermal expansion coefficient) portion formed on the unitary insulating tube for absorbing a difference between thermal expansion coefficients of the crossover and the unitary insulting tube to thereby inhibit disconnection of the crossover (Berger - col.1 lines 40-45).

Regarding claim 12 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 11.
Murakami et al. further wherein ends of the unitary insulating tube are respectively secured to the crossover (Fig. 3 element 15).

Regarding claim 13 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 11, wherein the unitary insulating tube is bent to define an elbow, and the disconnect stress absorbing cutout portion is located at the elbow. Please see above rejection of claims 5-6.

Regarding claim 14 Dulin et al. in view of Murakami et al. and Berger discloses the disconnect protection structure of claim 11, further comprising least one additional disconnect stress absorbing cutout portion formed on the unitary insulating tube Please see above rejection of claims 5-6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.
Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luis E. Román
Patent Examiner
Art Unit 2836

LR/102605

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PRIMARY EXAMINER